

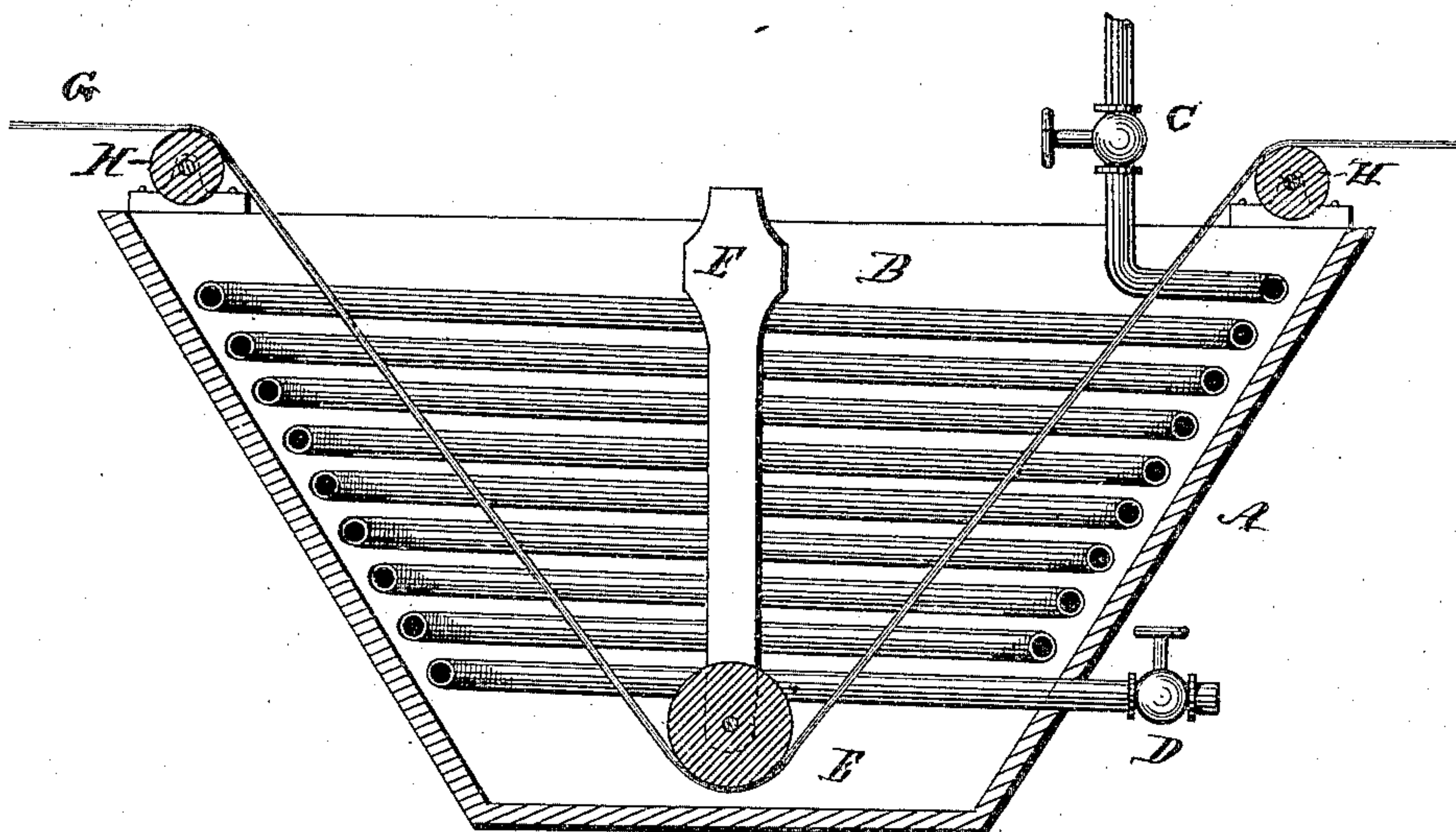
(No Model.)

W. H. H. CHILDS.

MANUFACTURE OF ROOFING FELT.

No. 314,429.

Patented Mar. 24, 1885.



Witnesses:  
C. L. Eumons  
T. J. Henderson.

Inventor:  
W. H. H. Childs  
By S. H. Finsbaugh  
Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM H. H. CHILDS, OF NEW YORK, N. Y.

## MANUFACTURE OF ROOFING-FELT.

SPECIFICATION forming part of Letters Patent No. 314,429, dated March 24, 1885.

Application filed January 12, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, W. H. H. CHILDS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in the Manufacture of Roofing-Felt, of which the following is a specification, reference being had therein to the accompanying drawing.

10 My invention relates to improvements in the manufacture of roofing-felt.

The object of my invention is to treat the felt as it leaves the machine which deposits the bituminous cement between the layers of 15 felt so that the felt can be rolled up at once without danger of adhering.

My invention consists in treating the felt as it leaves the machine to a hot chemical solution which will neutralize or remove the 20 sticky deposit on the surface of the felt, so that the felt can be rolled up at once for transportation.

In the drawing forming a part of this specification I have shown in sectional view a tank 25 having therein a coil of pipes for heating the solution and a roller in the bottom thereof, under which the felt is drawn after it leaves the machine.

In the manufacture of roofing material composed of two or more plies of felt joined together with tar, pitch, rosin, asphaltum, or any composition of a bituminous nature, great difficulty has been experienced in preventing the felt from adhering together when rolled 30 up for shipment, and to overcome this difficulty many devices and expedients have been resorted to; but none of them have proved satisfactory or meet the requirements of the case. It has been proposed to place between 40 the roofing-felt as it is being rolled up a sheet of untarred paper; but this, while being an expensive expedient, does not always answer the purpose desired, as the felt adheres to both sides of the untarred paper and cannot be un- 45 rolled. Again, it has been proposed to cool the felt after leaving the machine which deposits the adhering layers of bituminous cement between the webs or layers of felt by bringing it in contact with currents of cold air or 50 water. This process has the effect of chilling and hardening the coal-tar or bituminous cem-

ent which has been driven through onto the outer surface of the felt, so that it is possible to roll the felt into rolls without its adhering at once; but in course of time, and when subjected to the ordinary temperature of warm 55 weather or summer heat, the coal-tar or bituminous cement becomes soft and causes the layers to adhere together, so that they cannot be unrolled when desired for use. I effectually and economically overcome this difficulty by my process, which will be described hereinafter.

My invention is specially applicable in the manufacture of the roofing material known as 65 "two and three ply felts," in which hot pitch or bituminous compounds are placed between the sheets of felt, which has been previously tarred, as is the common practice. The heat of the pitch or other bituminous composition 70 causes the felt to sweat and deposit upon its surface a sticky tarry substance, which unites the felt closely when the surfaces come in contact on being rolled up.

To neutralize and remove the sticky adhesive deposit upon the surface of the felt is the object of my invention. This I do in the following manner at small expense and without injury to the fabric of the felt.

After the material, whether composed of 80 two, three, or four plies of felt, has been formed upon the machine by any process whatever, I chemically treat it by passing it through a hot solution of soda or milk of lime, or a combination of the two. These I have found 85 to give good results in neutralizing or dissipating the sticky substance formed on the surface of the felt, as before mentioned, so that the felt can be rolled up at once as soon as it emerges from the bath. In some instances I 90 may mix with the solution above named hydraulic cement or any substance which will leave or deposit a powder on the surface of the felt; or I may use any of the acids or alkalies, either alone or in combination, which 95 will remove the sticky nature of the coating of the felt without injuring the fabric, and such I consider within the scope of my invention.

As heretofore mentioned, it is necessary to 100 have the chemical solution heated through which the fabric or roofing material is passed.



For this purpose I provide a tank or vat, A, in which there is placed one or more coils of steam-pipes, B, the steam being admitted at the top or point C, while the water of condensation finds its exit from the pipe at D.

E is a roller, mounted in suitable standards, F, at each side of the tank, under which the fabric G passes and is submerged in the chemical solution contained in the tank or vat A. The tank or vat A is also provided with friction-rollers H, which prevent the fabric from becoming injured by coming in contact with the walls of the tank.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The method herein described of making roofing-felt, the same consisting in subjecting the felt to a chemical solution, substantially such as described, whereby the surfaces are freed from the sticky or adhesive substance, as set forth.

2. The method herein described of manufacturing roofing-felt, the same consisting in subjecting the felt as it leaves the machine to a hot solution of soda and milk of lime or their described equivalents, as set forth.

3. The method herein described of treating roofing-felt to prevent its adhering together when formed in rolls, the same consisting in subjecting it, after it leaves the machine which joins the several felts into one, to a hot chemical solution of soda, milk of lime, and hydraulic cement or other material which will deposit a powder on the felt, as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. H. CHILDS.

Witnesses:

J. B. DAVENPORT,  
R. J. SLANDORFF.